Aseptic Meningitis Update

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During March 2003, several state public health departments noted an increase in reports of aseptic meningitis, and as of August 7, seven states (Arizona, California, Georgia, Idaho, Oregon, South Carolina, and Texas) had reported outbreaks associated with either Enterovirus 9 or Enterovirus 30[1].

The Indiana State Department of Health (ISDH) has noticed an increase in the number of cases reported when compared to the previous years. Table 1 shows the number of cases reported per year in Indiana from 2001 to October 28, 2003.

Table 1. Aseptic Meningitis, Total, Confirmed and Probable Cases, Indiana, 2001-October 2003

Year	Total	Confirmed	Probable
2000	240	*	*
2001**	505	*	*
2002**	353	149	204
2003** (through October 28)	226	103	123

* The Confirmed and Probable case definitions were not used prior to 2002.
** Provisional data.

One of the difficulties with reporting aseptic meningitis is that it does tend to peak in terms of activity at almost the same time of the year as mosquito-transmitted diseases. During an August Centers for Disease Control and Prevention (CDC) telebriefing, Dr. Stephen Ostroff, Deputy Director of the CDC National Center for Infectious Diseases, noted that although West Nile virus is not considered a cause of aseptic meningitis, the similar seasonal occurrence can cause confusion when determining the cause of illness[2]. It is critical that public health investigations collect enough information to differentiate cases of West Nile virus from cases of aseptic meningitis. The ISDH has developed a form to assist local health departments in investigating suspected cases of aseptic meningitis.

Background on Aseptic Meningitis

Viruses are the most common etiology, with Entero viruses accounting for over half of cases reported. Other causes include mycobacteria, Listeria, syphilis, Leptospira, Toxoplasma, fungi, meningeal carcinomatosis and meningeal reaction to an inflammatory destructive process or medication. Early etiologic diagnosis of aseptic meningitis helps to avoid unnecessary antibiotic treatment and additional testing.

Aseptic meningitis illness is self-limiting and patients tend to recover in approximately 1 week. Treatment is usually symptomatic and no specific prevention or control measures are available for non-polio entero viruses including E9 and E30. Adherence to good hygienic practices, such as frequent and thorough hand washing (especially after diaper changes), disinfection of contaminated surfaces by household cleaners (e.g., diluted bleach solution), and avoidance of shared utensils and drinking containers, is recommended to help interrupt transmission.

Reporting and Investigation Aseptic Meningitis Cases

410 IAC 1-2.3(84) indicates that aseptic meningitis is to be reported within 72 hours. Many individuals are not necessarily hospitalized, and therefore, the information necessary to make a definitive diagnosis is not collected. Thus, completing the correct form with the requested information is not only necessary, but is also crucial in determining the classifications of a suspected aseptic meningitis case.

Reporting facilities should not complete the Suspect Aseptic Meningitis form 51001(8-02). This form is designed for use by local health departments to aid in their investigations of suspect cases. Rather, suspected cases of aseptic meningitis should be submitted by physicians and hospitals to their local health department on the Confidential Report of Communicable Diseases SF form 43823, the same form used for other reportable diseases. Upon completion of the follow-up investigation, local health departments attach the Confidential Report of Communicable Diseases form to the Suspect Aseptic Meningitis form and send the completed forms to ISDH, where the suspect case is then classified.

As stated above, certain information is helpful to classify suspected aseptic meningitis cases. Useful information in reporting includes clinical presentation of the patient and laboratory findings. Cerebral spinal fluid (CSF) analysis is particularly useful.

The ISDH classifies each report of aseptic meningitis into one of the following four categories:

1. Confirmed Case

1) A virus isolated in CSF whether or not symptoms are reported.
2) Symptoms are present and CSF WBC>5/cc; lymphocytes predominate.
3) Symptoms (fever, headache, photophobia, may or may not have stiff neck.
4) A virus isolated in other body fluid and CSF WBCs >5, lymphocytes predominate.
5) CSF WBCs >5, lymphocytes predominate.

2. Probable Case

1) Symptoms (fever, HA, photophobia, may or may not have -stiff neck), CSF WBC >5/cc, elevated protein (if done).
2) A report with symptoms and no bacterial growth in the CSF and no differential (i.e. WBCs, Protein)
3) A report with symptoms and no bacterial growth from CSF.
4) MD report no symptoms listed, CSF WBC>5 and no bacterial growth

3. Suspect Case

1) Provider report stating aseptic meningitis with no other information included
2) A report with symptoms but no CSF
3) MD report, no symptoms listed, CSF WBC>5

4. Not a Case

1) A report with symptoms and CSF WBCs less than 5/cc
2) A report with symptoms and normal glucose and/or protein
3) WBCs greater than 10 (with or without antibiotics prior to test) and PMNs predominate.
4) Bacteria isolated in CSF

Notes:

- Headache and fever are often symptoms.
- Stiff neck only occurs in approximately 50% of cases.
- No bacterial growth does not mean that the case is not bacterial.
- Usual viral WBC is >5; Glucose and Protein around 50; and WBCs are lymphocytic.
- Usual bacterial-WBCs are mostly polys.
- Early viral meningitis (symptoms less that 24-48 hours) - CSF of bacterial and viral pleocytosis is similar with PMNs predominating (polys). After 48 hours, lymphocytes predominate in viral.

Web Resources on Aseptic Meningitis

http://www.in.gov/isdh/publications/2002communicable_disease_ref_guide/index.htm
http://www.in.gov/isdh/healthinfo/viral%20meningitis.htm
http://www.cdc.gov/ncidod/dvrd/virlmen.htm

References:

[1] Outbreaks of Aseptic Meningitis Associated with Echoviruses 9 and 30 and Preliminary Surveillance Reports on Enterovirus Activity --- United States, 2003. Retrieved October 27,2003 from: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5232a1.htm

[2] West Nile Virus in the United States. Retrieved October 26,2003 from: http://www.cdc.gov/od/oc/media/transcripts/t030814.htm